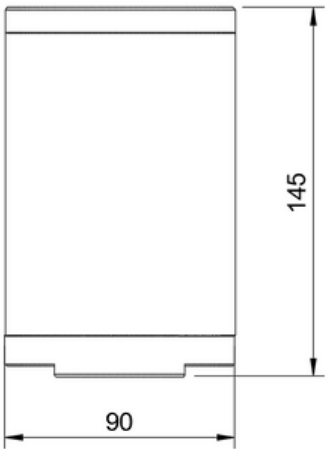

Dimensions: 90 x 145 mm
Weight: 650 g
Pressure range / signal resolution
0-10 MPa / resolution 1 kPa
0-50 MPa / resolution 5 kPa
0-100 MPa / resolution 10 kPa
Thickness measurement resolution: 3 µm

The ASC-AD+

Introducing ASC-AD+: The Future of Solid-State Battery Testing

ASC-AD+ is Sphere Energy's latest product for solid-state battery testing, designed to ignite innovation in the energy storage field. This new R&D tool is designed to explore multiple sample dimensions effortlessly, while accessing crucial data on pressure and swelling, all within a streamlined, user-friendly interface. ASC-AD+ reinvents the testing environment for upscaling battery technologies with the option of varying the surface area of the samples up to 3.3x fold. All this with the possibility of tunning the setup for experiments under various pressure ranges, from a few kPa up to hundreds of MPa.

Whether you require fixed thickness or fixed pressure modes, ASC-AD+ offers the precision and flexibility needed for practical tests in solid-state battery research. Its compact form factor optimizes your lab space, ensuring easy handling and transfer within glove-box, temperature chambers, and test benches. ASC-AD+ is more than just an R&D tool, it's your ally for groundbreaking discoveries in the realm of solid-state batteries.

MAIN FEATURES

- Multiple sample dimensions
- Pressure monitoring
- Swelling monitoring
- Built-in pressure sensor
- Fixed thickness mode
- Fixed pressure mode
- Multiple options of spring constants
- Exchangeable insulation sleeves
- Airtight
- Compact dimensions

Enhanced data quality with ASC-AD+ pressure monitoring system

With ASC-AD+, we've redefined pressure monitoring to be the key parameter for SSBs materials testing, ensuring data quality and reliability. The setup allows for precise regulation and monitoring of the mechanical compression of your samples, helping you to get real-time insights into how pressure influences solid-state batteries.

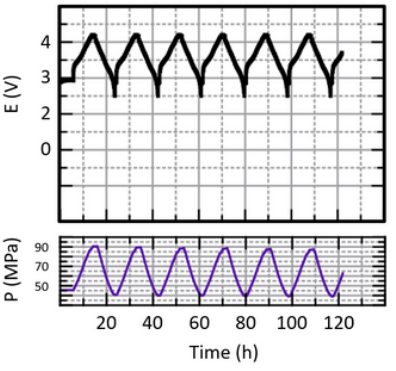

Fig. 1 - Electrochemical charge and discharge cycles of a solid-state battery cell prototype with in-operando sample pressure monitoring.

ASC-AD+: Multiple Sample Diameters for Advanced Upscaling

In the quickly evolving landscape of solid-state battery research, the ASC-AD+ also focuses on accelerating the technology transfer through different TRLs by upscaling tests of samples while keeping strict control of the experimental conditions. It brings unmatched versatility, seamlessly accommodating a range of sample diameters, from the compact 8 mm to the substantial 14.5 mm, ASC-AD+ empowers us to extend our research surface area by a remarkable 3.3 times. Additionally, the ASC-AD+ shares the same dimensions as our new ASC-T+ setup, ensuring a harmonious integration into our existing ASC portfolio of testing setups. This means a smoother transition, fewer disruptions, and more time dedicated to what we do best – pushing the boundaries of solid-state battery research.

ASC-AD+ Standard Setup with multiple sample sizes

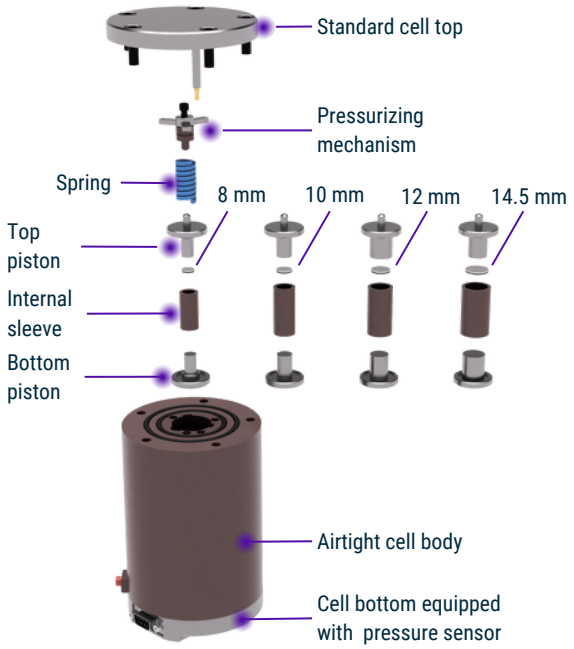

Fig. 2 - ASC-AD+ with multiple sample sizes from 8 to 14.5 mm of diameter.

ASC-AD+: Pioneering Thickness Monitoring for Advancing Solid-State Batteries

ASC-AD+ offers a new practical approach for R&D in the field of solid-state batteries, boosting the way we understand and optimize battery cell performance. The ASC-AD+ setup can also be equipped with a thickness monitoring system for meticulously tracking the swelling of battery cells, providing valuable insights into the mechanical properties of battery materials. When coupled with pressure monitoring, this allows researchers to further optimize the performance of energy storage systems. Moreover, this innovative technology also enables precise estimation of the ionic conductivities of materials measured by Electrochemical Impedance Spectroscopy (EIS), opening new doors for optimizing battery design and pushing the boundaries of solid-state battery technology to new frontiers.

ASC-AD+ equipped with In-Operando Thickness Monitoring Option

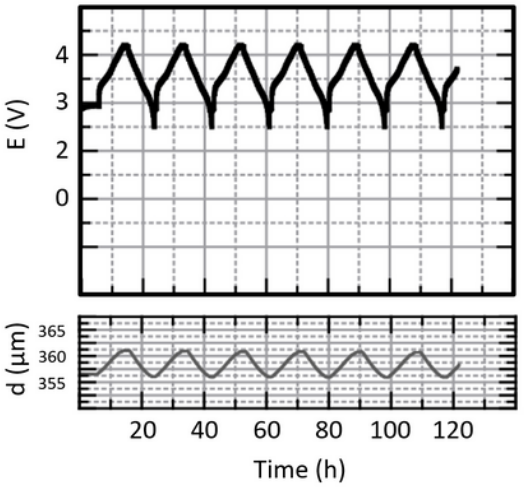

Fig. 3 - Electrochemical charge and discharge cycles of a solid-state battery cell prototype with in-operando thickness monitoring.

Sphere Energy is much more than equipment for R&D, we also provide valuable insights in different fields along the entire battery value chain, guiding our customers to embrace battery technology and to unlock new business opportunities.

Schedule a meeting:

Go to website: